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EXAMINER	
GAY, JENNIFER HAWKINS	
ART UNIT	**PAPER NUMBER**
3672	

DATE MAILED: 01/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	09/973,443	JOHNSON, CRAIG DAVID	
	Examiner	Art Unit	
	Jennifer H Gay	3672	

-- The MAILING DATE of this communication appears on the cover sheet with the c rrespondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *23,24 and 26-29* is/are allowed.

6)☒ Claim(s) *1,2,4-19,21,22 and 25* is/are rejected.

7)☒ Claim(s) *3 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 7-9, 13-15, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by West (US 2,597,554, cited by applicant).

Regarding claim 1: West discloses a gravel pack completion method. The completion includes the following features:

- A first (31) and second (27) gravel pack sections located in a wellbore where each section is adapted to allow wellbore fluid to be produced there through. *It should be noted that the gravel pack sections would inherently impose a predetermined radial flow restriction upon the production fluid flowing through the gravel pack since the operator would know the density of the sections based on the type and size of gravel used; the density of the gravel directly affects the flow rate through the section.*

  It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

- The first section imposes a substantially radial flow restriction that is different from that flow restriction imposed by the second section. (See col. 6, lines 25-27 where it states that section "31" has a greater

permeability than "27" thus would imposes a different flow restriction.)

Regarding claim 2: As recited in column 6, line 28-column 7, line 15, a graded gravel material is used for the different sections of the gravel pack. *It should be noted that the gravel pack sections would inherently have a permeability within a predetermined range since the operator would know the density of the sections based on the type and size of gravel used; the density of the gravel directly affects the permeability of the section.*

Regarding claim 7: West discloses a packer (41) attached to the sand screen.

Regarding claim 8: As seen in Figure 1, the completion of West includes production tubing (40) located within a screen (16).

Regarding claim 9: It should be noted that the gravel pack sections would inherently have a predetermined range of flow conductivities since the operator would know the density of the sections based on the type and size of gravel used; the density of the gravel directly affects the flow conductivity through the section.

Regarding claim 13: West discloses a gravel pack completion method. The completion includes a gravel pack that creates a varying substantially radial flow restriction along its length via sections "31" and "27" that have different permeablities (see col. 6, lines 25-27).

Regarding claim 14: The completion further includes a screen (16) that is capable of imposing a restriction on the communication of fluid through the screen. *It should be noted that the operator would known the flow restriction through a wellbore screen prior to insertion into the wellbore thus would use a screen that had a flow restriction that was within the range desired for the wellbore.*

Regarding claim 15: West discloses a gravel pack completion method. The completion includes the following features:

- A first (31) and second (27) gravel pack sections located in a wellbore where each section is adapted to allow wellbore fluid to be produced

there through. *It should be noted that the gravel pack sections would inherently impose a predetermined radial flow restriction upon the production fluid flowing through the gravel pack since the operator would know the density of the sections based on the type and size of gravel used; the density of the gravel directly affects the flow rate through the section.*

- The first section imposes a substantially radial flow restriction that is different from that flow restriction imposed by the second section. (See col. 6, lines 25-27 where it states that section "31" has a greater permeability than "27" thus would imposes a different flow restriction.)

Regarding claim 19: West discloses a gravel pack completion method where the method involves the placing a gravel pack in a wellbore (see Figure 1) where the gravel pack includes a first (31) and second (27) section. Each of the sections is adapted to allow wellbore fluid to be produced there through and the first section imposes a substantially radial flow restriction that is different from that flow restriction imposed by the second section. (See col. 6, lines 25-27 where it states that section "31" has a greater permeability than "27" thus would imposes a different flow restriction.)

3. Claims 10 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Bode et al. (US 2002/0157837, previously cited).

Regarding claim 10: Bode discloses an apparatus for completing a wellbore. The apparatus includes the following features:

- A production tubular (18) comprising screen sections (see paragraph 0063) capable of communicating fluid between the reservoir and the interior of the production tubular.

  The examiner notes that it has been held that the recitation that an element is "capable of" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

- Each of the sections includes a flow restrictor (54-56, see paragraph 0039) capable of imposing a known restriction on the communication of fluid thereby regulating the pressure profile along the production zone. *It should be noted that the operator would known the flow restriction through a wellbore screen prior to insertion into the wellbore thus would use a screen that had a flow restriction that was within the range desired for the wellbore. It should be further noted that the flow restriction through a screen directly affects the pressure profile of the screen.* The flow restriction through at least one screen section can vary from that of at least one other section (see paragraph 0039).
- Bode discloses using a wellbore screen. On page 16 of the instant application, applicant discloses that sand packed screens, wire mesh filled screens, and screens with tortuous paths are well known in the art; therefore, screens of Bode could be any of the above types of screens.

Regarding claim 11: As seen in Figure 3, the production tubing is located in a horizontal wellbore.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 4-6, 16-18, 21, 22, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over West (US 2,597,554, cited by applicant) in view of Bode et al. (US 2002/0157837, previously cited).

Regarding claims 4, 16, and 21: As seen in Figure 1, West discloses a wellbore screen (16) used in conjunction with the gravel pack completion method. However, West does not disclose a plurality of flow restricting sections that are capable of imposing a predetermined flow restriction upon the fluid production flowing through the screen sections.

Bode teaches a gravel pack completion method similar to that of West. The completion of Bode further includes a plurality of flow restrictors (54-56, see paragraph 0039) that can be used to control the fluid flow through wellbore screens used in a gravel pack operation (see paragraph 0063). On page 16 of the instant application, applicant discloses that sand packed screens, wire mesh filled screens, and screens with tortuous paths are well known in the art; therefore, screens of Bode could be any of the above types of screens.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified West to include the plurality of controllable flow restrictors located within wellbore screens as taught by Bode in order to have been able to control the fluid loss of the gravel slurry when being injected into the wellbore. One would have been motivated to make such a combination because a more uniform packing of the well screens and wellbore would have been obtained, as taught by Bode.

Regarding claims 5 and 17: The plurality of flow restrictors of Bode would be capable of imposing a flow restriction through the screen thereby regulating the pressure profile along the screen length. *It should be noted that the operator would known the flow restriction through a wellbore screen prior to insertion into the wellbore thus would use a screen that had a flow restriction that was within the range desired for the wellbore. It should be further noted that the flow restriction through a screen directly affects the pressure profile of the screen.*

Regarding claims 6 and 22: Bode discloses using a wellbore screen. On page 16 of the instant application, applicant discloses that sand packed screens, wire mesh filled

screens, and screens with tortuous paths are well known in the art; therefore, screens of Bode could be any of the above types of screens.

Regarding claim 18: As seen in Figure 3 of Bode, the wellbore screens are located in a horizontal wellbore that includes a heel and toe end.

Regarding claim 25: West discloses a gravel pack completion method where the method involves the placing a gravel pack in a wellbore (see Figure 1) where the gravel pack includes a first (31) and second (27) section. Each of the sections is adapted to allow wellbore fluid to be produced there through and the first section imposes a substantially radial flow restriction that is different from that flow restriction imposed by the second section. (See col. 6, lines 25-27 where it states that section "31" has a greater permeability than "27" thus would imposes a different flow restriction.)

As seen in Figure 1, West discloses a wellbore screen (16) used in conjunction with the gravel pack completion method. However, West does not disclose a plurality of flow restricting sections that are capable of imposing a predetermined flow restriction upon the fluid production flowing through the screen sections.

Bode teaches a gravel pack completion method similar to that of West. The completion of Bode further includes a plurality of flow restrictors (54-56, see paragraph 0039) that can be used to control the fluid flow through wellbore screens used in a gravel pack operation (see paragraph 0063). On page 16 of the instant application, applicant discloses that sand packed screens, wire mesh filled screens, and screens with tortuous paths are well known in the art; therefore, screens of Bode could be any of the above types of screens.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified West to include the plurality of controllable flow restrictors located within wellbore screens as taught by Bode in order to have been able to control the fluid loss of the gravel slurry when being injected into the wellbore. One would have been motivated to make such a combination because a more

uniform packing of the well screens and wellbore would have been obtained, as taught by Bode.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bode et al. (US 2002/0157837, previously cited) in view of West (US 2,597,554, cited by applicant).

Bode et al. discloses all of the limitations of the above claims except for a gravel pack having a varying substantially radial flow restriction along its length.

West teaches a completion system similar to that of Bode et al. West further teaches a gravel pack that has a varying radial flow along its length via section "31" and "27" (see Figure 1).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Bode et al. to include a gravel pack that had a varying radial flow restriction along its length as taught by West in order to have prevented coning in the wellbore (see col. 2,lines 43-49). One would have been motivated to make such a combination because a more effective production well would have been obtained, as taught by West.

Allowable Subject Matter

7. Claims 23, 24, and 26-29 are allowed.

8. Claims 3 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. In response to applicant's argument that Nguyen does not teach developing a simulation completion model, the examiner agrees and has indicated that claims 26-29 are allowable.

10. In response to applicant's argument that Bode does not teach a well screen that imposes a higher pressure drop at the heel of the wellbore than the toe but rather teaches an undesirable

situation where there is a higher flow thus a lower pressure differential, at the heel than the toe, the examiner agrees and has indicated that claims 3, 20, 23, and 24 are allowable.

11. Applicant's arguments filed 24 November 2003 have been fully considered but they are not persuasive.

In response to applicant's argument that the gravel pack sections (31) of West are covered by a filter cake (32 and 33) thus are not adapted to produce fluid therethrough, the examiner notes that, as seen in Figure 1, not all of the different gravel pack sections include a filter cake and that, as noted in column 6, lines 47-52, wellbore fluids are clearly produced through the layers.

Applicant's argument regarding the phrase "adapted to" is not a valid argument as West clearly teaches fluid flow through the gravel pack layers.

Applicant's argument regarding combining West with a secondary reference that teaches a gravel pack that is adapted to produce fluid therethrough is not a valid argument as West clearly teaches fluid flow through the gravel pack layers.

In response to applicant's argument that West does not teach that the gravel pack layers (27) have varied radial flow restrictions, the examiner notes that West teaches that layers "27" and "31" have different permabilities thus they have different radial flow restrictions.

In response to applicant's argument that Bode et al. does not teach that each screen section includes a flow restriction element and that the screen "78" does not control flow but tubular member "72" and slidable sleeve "76" does, the examiner notes that she has not used element "78" in her rejection but has relied upon the teaching in paragraph 0063 of using the taught flow control apparatus with gravel pack screens.

In response to applicant's argument that Bode et al. teaches away from combination with West because Bode et al. points out the shortcomings of flow control devices that are not adjustable, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references

would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In response to applicant's argument that West does not teach a generally horizontal well, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). The examiner notes that she has not indicated that West teaches a horizontal well but has used Bode to teach this feature. Applicant is arguing West, with regards to this feature, as 35 USC 102 reference when it was applied under 35 USC 103.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H Gay whose telephone number is (703) 308-2881. The examiner can normally be reached on Monday-Thursday, 6:30-4:00 and Friday, 6:30-1:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (703) 308-2151. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

David Bagnell
Supervisory Patent Examiner
Art Unit 3672

JHG
January 14, 2004